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WASHINGTON LETTER.

WASHINGTON, D. C., DEC. 15, 1897.

FOREST CONSERVATION.—A notable advance has lately been shown in the intelligent appreciation on the part of the public of matters relating to forest conservation. During the past season notable additions have been made to the knowledge of the forests of the country, leading ultimately, it is hoped, toward definite provisions for the proper use of the forest resources of the country. In addition to the detailed surveys which have been carried on by the U. S. Geological Survey under the Department of the Interior, different bureaux of the Department of Agriculture have continued work along related lines. For the Division of Forestry, Dr. Bernhard E. Fernow, chief of the division, has made an extensive reconnaissance in the West, visiting first the forestry stations in the Dakotas and Nebraska and then examining the Black Hills. Later he set on foot work at the Experimental Station at Bozeman, Mont., and continuing westward visited the forests of the State of Washington and in particular those in the vicinity of Mt. Rainier. During a portion of the trip he was accompanied by Dr. C. A. Tichonoff, Inspector of the Forestry Corps of Russia and Counsellor of State. Dr. Tichonoff under direction of the Minister of Agriculture and Crown Domain has spent about three years in the examination of the forests and forestry management of France and Germany, and has also visited other portions of Europe, going to England and thence to America, in order, it is understood, to obtain information bearing upon questions of future competition in the matter of timber supplies. The department which he represents has in charge six hundred million acres of land, mainly in forest, and is bringing into the market in Siberia and the Caucasus large areas of valuable timber.

Mr. Frederick V. Coville, chief of the Forestry Division of the Department of Agriculture, has returned from an examination of the great Cascade Forest Reserve in western Oregon. The points to which he has given particular attention have been those connected with sheep grazing. Many friends of the forestry movement urge that for the protection of this and other great forests sheep must be rigorously excluded. On the other hand influential

citizens in the State of Oregon who are interested in its material development believe that the forest reservation should be abolished, especially if directly or indirectly the grazing of sheep is thereby limited, for a great part of the prosperity of that part of the country depends upon wool and mutton. Between these extreme views, both earnestly advocated, there is every shade of opinion, and the efforts of Mr. Coville have been directed to ascertain facts such that advice might be given officially by the Department of Agriculture to the officials of the Department of the Interior charged with the preparation of administrative rules.

A careful examination of the area has been made, it being traversed in many directions by means of a light pack train. Mr. Coville has camped with the sheep herders, followed the course of their migration, talked with them and listened to the arguments of their bitter opponents; he has attempted to measure the injury done by the sheep and to estimate at the same time the value of the industry to the community, weighing one against another. It is probable that regulations can be made, permitting the grazing of sheep on a great part of the reservation, and excluding them from localities where actual damage can be done either to the seedlings or to the beauty of resorts frequented by visitors. It will be necessary, however, to make stringent regulations concerning the number of sheep on each range, and to insure to each sheep owner the continued use of a definite tract for a number of years, so that he may properly protect this from over-grazing. At the same time the sheep owner thus protected must be held responsible for fires which are liable to occur upon or near his range, for it has been shown that some fires doubtless have been caused by sheep herders, although they cannot be chargeable with all of the crimes of this character usually laid at their doors. If forest fires could be absolutely prevented by excluding the sheep men, this latter course would no doubt be pursued, but, since fires do occur in regions where the sheep have never ventured, it is evident that the exclusion of the sheep men is not the only remedy for the evil.

The American Forestry Association held its Sixteenth Annual Meeting in Washington on December 8th, re-electing Gen. Francis H. Appleton of Boston as its president. The report of the Executive Committee called attention to the progress in forestry legislation, and showed that through the long continued efforts of the Association Congress had directly or indirectly been induced to take action. Although it had not been possible to secure as complete legislation as desired or needed, yet the efforts of sixteen

years have been crowned with a small measure of success. The reports from various States demonstrated a growing public sentiment in the East in favor of State ownership and control of various areas, for the purpose of protection of the water-shed of streams and for furnishing timber supplies, as well as affording great parks for the recreation of the people. In this respect New York State has led by the purchase of great areas in the Adirondacks; Massachusetts has followed in the acquisition of lands for its metropolitan parks, and Pennsylvania has also made provision for holding in forests wild lands sold for taxes.

The action of the National Irrigation Congress, which met at Lincoln, Nebr., on September 29-30, indicates the growing public sentiment of the West in the importance of forestry conservation. A resolution was introduced and passed without a dissenting vote to the effect "that the President of the United States be memorialized, as soon as a proper and adequate form of administration shall be provided, to withdraw from entry or sale under the Act of Congress of March 3, 1891 all public lands which are of more value for their timber than for agriculture or for their minerals." This resolution was ably introduced and clearly explained by Lieut. George P. Ahern of the U. S. Army, now stationed as Military Instructor at Bozeman, Mont. In the course of his army life Lieutenant Ahern has had long experience in the West, and has become one of the most earnest advocates of a business-like administration of the public forests. This resolution is one of the most radical ever introduced and passed by a representative Western assembly in favor of forest protection, and is especially significant of the education of the public, following the clamorous outbursts of last spring against the reservation of even a portion of the public forests.

COAST SURVEY.—On the first of December Dr. Henry S. Pritchett assumed the duties of Superintendent of the Coast and Geodetic Survey. Dr. Pritchett is a native of Missouri, and since 1881 has been Professor of Astronomy in Washington University, St. Louis. His appointment to the office of Superintendent has met with warm approval in scientific circles in Washington, and he is welcomed as a worthy successor of Dr. T. C. Mendenhall and of the scientific men who preceded him. It is hoped and believed that Dr. Pritchett will maintain the Survey upon the high plane upon which it has been so successfully conducted by these men and from which since 1894, the year of the retirement of Dr. Mendenhall, it has been in danger of falling through the introduction

of politics into its organization. Dr. Pritchett is familiar with the work of the Survey, not only from his general knowledge as an astronomer, but also by direct connection with its operations at various times in the past, having served as acting assistant in gravity determinations in Australia, Singapore, Japan and elsewhere. He thus has the advantage of an intimate knowledge of many of its methods, and on the other hand is not hampered by being closely bound to the traditions of the past or by the intimacies or prejudices, which a man brought up in the office must necessarily possess. There is no question but what his appointment to this high position was due to his merit alone, and that considerations of political expediency have not entered into it.

NICARAGUA CANAL.—The Board of Commissioners, together with engineers and assistants, sailed from New York on December 5th to begin examinations of the route of the proposed Nicaragua Canal. This work was authorized by an appropriation in the last bill for sundry civil expenses of the Government, and has been placed under the direction of the Department of State. By the wording of the Act the Commission is "to continue the surveys and examinations authorized by the Act approved March 2d, 1895, as to the proper route, the feasibility and cost of construction of the Nicaragua Canal, with the view of making complete plans for the entire work of construction as therein provided." The appropriation available is \$150,000. Under the terms of the law the work is in charge of an officer of the Army, an officer of the Navy, and an engineer from civil life. The army officer detailed is Col. Peter C. Hains, formerly in charge of improvement of Potomac River; the naval officer is Rear-Admiral John G. Walker, who has recently served on the Lighthouse Board; the engineer from civil life is Mr. Lewis M. Haupt, of Philadelphia. The U. S. S. *Newport* has been placed at the service of the Commission, and having conveyed the party to Nicaragua, will await their movements, and be prepared to bring back the officers when their examination has been completed.

In addition to the surveyor and assistants employed by the Commission, two experts have been detailed from the U. S. Geological Survey; the one, Dr. C. Willard Hayes, to make a thorough study of the geology and of the results obtained by borings, being given charge of twelve boring parties; the other, Mr. Arthur Powell Davis, to make examinations into the hydrography of the region. Dr. Hayes has had long experience in field work in various parts of

the United States, particularly in the southern Appalachians, and also in Alaska. He is well qualified to study the phenomena of rock disintegration and of questions bearing upon the stability of earth slopes and of foundations. Mr. Davis has also had wide experience, beginning as a topographer on the Geological Survey in 1882. He has mapped a considerable portion of the arid regions, and later has given his time exclusively to hydrographic investigations, being in direct charge of field work of river measurement and of reservoir surveys. He has been detailed to conduct all investigations of stream flow, evaporation, rainfall and sedimentation. The matter of hydrography is of particular importance in discussions of the feasibility of the Nicaragua Canal, and one of the most striking features in the previous reports upon the Nicaragua Canal has been the absence of all reliable data upon the subject. In view of the thousands or even hundreds of thousands of dollars spent in surveys, it is almost incredible to find such a lack of systematic observations of quantity of water flowing in the streams, and of fluctuations in volume. If, during the past ten years, observations of rainfall and river flow had been maintained at an annual cost of a few hundred dollars, it would now be possible to discuss with confidence certain items of expenditure for which approximations must be made. Records of this kind would not only save the expenditure of thousands of dollars on the present survey, but would give a certainty to its conclusions which cannot otherwise be had.

DEATH OF MR. HUBBARD.—In the death of Hon. Gardiner Greene Hubbard, the City of Washington has lost one of its notable men and one who has of late done much for the promotion and encouragement of scientific investigation. Mr. Hubbard became a Fellow of the American Geographical Society in 1889, but has mainly contributed to the diffusion of geographic knowledge through his activity as President of the younger Society at Washington. He was born in Boston, Mass., on August 25, 1822, the son of Samuel Hubbard, a Justice of the Bench of the Supreme Court of the State of Massachusetts. He was descended from English ancestry who, coming to the shores of New England, became prominent in the early history of the Commonwealth.

Mr. Hubbard graduated from Dartmouth College in 1841, later entering the law school at Cambridge, and completing the course was admitted to practice in 1843, opening an office for himself in 1848, and having a considerable number of important cases before

the courts of Massachusetts. In 1873 he was compelled to seek a milder clime, removing to Washington, where he continued his profession until 1878, when he retired from law to devote himself to the interests of the Bell Telephone Company, of which he was the projector. For five years he controlled and directed this enterprise, rendering it a practicable and highly serviceable institution. He continued to hold the office of director until his death. Going to Europe, he there introduced the telephone and organized the International, the Oriental, and other companies, obtaining important concessions from the Russian Government and making the service there the best of any in Europe. While living in Massachusetts, Mr. Hubbard was president of the first horse railway company in the State, and was also President of the Cambridge Water Works and of the Cambridge Gas Light Company.

Through a mishap to one of his daughters by which she lost her hearing, Mr. Hubbard became interested in matters concerning the teaching of the deaf to speak, and after investigating various methods of instruction he gathered a few pupils and opened a school which he maintained at his own expense for several years, initiating a movement which has spread to all parts of the country. He was for many years a member of the Board of Education of Massachusetts, and represented that State as one of the Commissioners at the Centennial Exposition in Philadelphia. Later he was appointed chairman of a special committee to investigate railway mail transportation, and largely to his labors is due the present organization of this important service. Always refusing to accept public office on the ground that it would impair his usefulness as a citizen, he has acted as the impartial adviser of several of the Presidents and of members of their cabinets in matters relating to scientific, educational and industrial affairs. He often appeared before committees of Congress to urge matters of national importance and took a prominent part in all of the movements looking toward the advancement of the republic along lines of the highest citizenship, being prominent in urging international arbitration and other measures tending to promote universal peace. As Regent of the Smithsonian Institution he took a keen interest in its management and endeavored in various lines to render it still more efficient and active.

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